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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/871,268	05/31/2001	Man Tai Vincent Lam	2030.42	2199

7590

08/25/2005

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EXAMINER

GRIER, LAURA A

ART UNIT PAPER NUMBER

2644

DATE MAILED: 08/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/871,268

Applicant(s)

VINCENT LAM, MAN TAI

Examiner

Laura A. Grier

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) 5, 6, 8, 11, 16, 18, 21-31, 33, 35 and 38 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-15, 17-20, 32, 34, 36 and 37 is/are allowed.
- 6) ☒ Claim(s) 1-4, 9 and 10 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/16/01, 1/29/02, 11/20/02, 3/29/02
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Art Unit: 2644

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of Species I, claims 1-4, 7, 9-10, 12-15, 17, 19-20, 32, 34 and 36-37 in the reply filed on 9/19/05 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

The non-elected claims, claims 5-6, 8, 11, 16, 18, 21-31, 33, 35 and 38, have been cancelled by the applicant.

### ***Claim Objections***

2. All dependent claims are objected to because of the following informalities: line 1 recites "Claim". The suggested spelling is -- claim --.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilmotte, U. S. Patent No. 2779020, in view of Harrington, U. S. Patent No. 4605902.

Regarding claim 1, Wilmotte discloses a frequency modulated multiplex system. Wilmotte's disclosure comprises a 1<sup>st</sup> frequency modulator (2) and a 2<sup>nd</sup> frequency modulator (13), which reads on modulating a 1<sup>st</sup> channel and modulating a 2<sup>nd</sup> channel, the modulated signals are processed and combined in a power amplifier and output through an antenna to a receiver for separate outputs (figures 8-9 and 7 and/or figure 4, col. 9, lines 34-75 and col. 10, lines 1-48, 7, lines 57-75 and col. 8, lines 1-3). However, Wilmotte fails disclose the modulated signals being combined through a high isolation combiner.

Regarding the high isolation combiner, Harrington discloses a two signals being combined in a hybrid combiner (19) – abstract, which indicates a high isolation combiner.

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Wilmotte by providing a hybrid combiner for the purpose of enabling enhanced sufficient isolation of the two signals, particularly among RF isolation.

Regarding claim 2, Wilmotte discloses a frequency modulated multiplex system. Wilmotte's disclosure comprises a 1<sup>st</sup> frequency modulator (2), which comprises an oscillator and a 2<sup>nd</sup> frequency modulator (13), which comprises an oscillator as well, and provide frequency deviations, which constitutes as voltage controlled oscillators and the modulated signals are combined in a power amplifier and output through an antenna to a receiver for separate outputs (figures 8-9 and 7 and/or figure 4, col. 9, lines 34-75 and col. 10, lines 1-48, 7, lines 57-75 and col. 8, lines 1-25, col. 11, lines 34-44). However, Wilmotte fails disclose the modulated signals being combined through a high isolation combiner.

Regarding the high isolation combiner, Harrington discloses a two signals being combined in a hybrid combiner (19) – abstract, which indicates a high isolation combiner.

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Wilmotte by providing a hybrid combiner for the purpose of enabling enhanced sufficient isolation of the two signals, particularly among RF isolation.

Regarding claim 3, Wilmotte and Harrington discloses everything claimed as applied above (see claim 2). Wilmotte discloses the use of power amplifiers.

5. Claims 1-4, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Limberg, U. S. Patent No. 3787629, in view of Harrington.

Regarding claim 1, Limberg discloses multiplex transmissions. Limberg's disclosure comprises a balanced modulator of a quadrature signal channel coupled to a VCO (40), and a balanced modulator of a stereophonic signal channel coupled to a VCO (30), which reads on modulating a 1<sup>st</sup> channel and modulating a 2<sup>nd</sup> channel, and the modulated signals are combined in a summing network (figure 1, col. 3, lines 26-68 and col. 4, lines 1-5), in preparation the be transmitted via an antenna to a receiver, wherein the signals a are separated upon reception (figure 2) and output through loudspeakers. However, Limber fails disclose the modulated signals being combined through a high isolation combiner.

Regarding the high isolation combiner, Harrington discloses a two signals being combined in a hybrid combiner (19) – abstract, which indicates a high isolation combiner.

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Limberg by providing a hybrid combiner for the purpose of enabling enhanced sufficient isolation of the two signals, particularly among RF isolation.

Regarding claim 2, Limberg discloses multiplex transmissions. Limberg's disclosure comprises a 1<sup>st</sup> VCO (40) coupled to a balanced modulator of a quadrature signal channel, and a 2<sup>nd</sup> VCO (30) coupled to a balanced modulator of a stereophonic signal channel, and are combined in a summing network (figure 1, col. 3, lines 26-68 and col. 4, lines 1-5). However, Limberg fails disclose the modulated signals being combined through a high isolation combiner.

Regarding the high isolation combiner, Harrington discloses a two signals being combined in a hybrid combiner (19) – abstract, which indicates a high isolation combiner.

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Limberg by providing a hybrid combiner for the purpose of enabling enhanced sufficient isolation of the two signals, particularly among RF isolation.

Regarding claim 3, Limberg and Harrington discloses everything claimed as applied above (see claim 2). However, Limberg and Harrington fail to disclose a 1<sup>st</sup> and 2<sup>nd</sup> amplifier coupled the 1<sup>st</sup> and 2<sup>nd</sup> modulated signals prior to being combined. The use of such amplifiers was well known in the art. Thus, it would have been obvious to one of the ordinary skill in the art at time the invention was made to modify the invention of Limberg and Harrington by providing a 1<sup>st</sup> and 2<sup>nd</sup> amplifier to the modulated signals for the purpose of increasing the strength of the modulated signals.

Regarding claim 4, Limberg and Harrington discloses everything claimed as applied above (see claim 2). However, Limberg and Harrington fails to disclose the VCO comprising a

dielectric resonator oscillator. The use of dielectric resonator oscillator was well known. Thus, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Limberg and Harrington by implementing a dielectric resonator oscillator for the purpose of providing optimal stability.

Regarding claim 9, Limberg and Harrington discloses everything claimed as applied above (see claim 2). It is obvious that the signal of the stereophonic and quadrature signal includes analog signals with frequency ranges between 50 Hz to 20 k Hz (col. 5, lines 38-47).

6. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

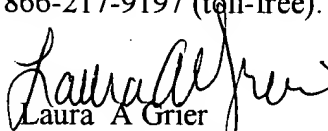
7. Claims 12-15, 17-20, 32, 34, 36 and 37 are allowed.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura A. Grier whose telephone number is (571) 272-7518. The examiner can normally be reached on Monday - Friday, 7:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571) 272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Laura A Grier  
Primary Examiner  
Art Unit 2644

November 28, 2005